(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

(43) International Publication Date

12 August 2004 (12.08.2004)

Organization
International Bureau



PCT

(10) International Publication Number WO 2004/068734 A1

(51) International Patent Classification⁷: H03G 3/30, H03M 1/18

H04B 1/707,

11012 1101

(21) International Application Number:

PCT/EP2003/014530

(22) International Filing Date:

18 December 2003 (18.12.2003)

(25) Filing Language:

60/444,778

03388069.1

English

(26) Publication Language:

English

(30) Priority Data: PA 2003 00120

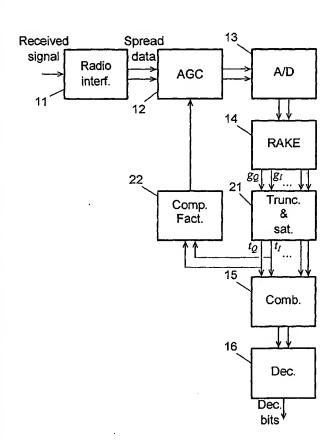
30 January 2003 (30.01.2003) DK 4 February 2003 (04.02.2003) US 29 October 2003 (29.10.2003) EP

(71) Applicant (for all designated States except US): TELE-FONAKTIEBOLAGET LM ERICSSON (publ) [SE/SE]; S-164 83 Stockholm (SE). (72) Inventors; and

- (75) Inventors/Applicants (for US only): BENGTSSON, Magnus [SE/SE]; Sofielundsvägen 32 A, S-214 25 Malmö (SE). JONSSON, Elias [SE/SE]; Södra Promenaden 3, S-211 29 Malmö (SE).
- (74) Agent: ZACCO, Denmark A/S; Hans Bekkevolds Allé 7, DK-2900 Hellerup (DK).
- (81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, EG, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT (utility model), PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: TRUNCATION AND LEVEL ADJUSTEMENT OF RAKE OUTPUT SYMBOLS



(57) Abstract: A method of receiving radio signals in a receiver for a digital wireless communications system comprises the steps of level adjusting a received radio signal by an automatic gain control (12); and despreading the signal in a RAKE unit (14) having a number of fingers. The despread data symbols are truncated to symbols represented by a smaller number of bits than that of the despread data symbols by selecting the least significant bits of the despread data symbols. The truncated data symbols are saturated; and the despread data symbols are level adjusted in dependence of said despread data symbols, so that overflow for the truncated data symbols is prevented. In this way the number of bits used to represent the despread data symbols that are output from the fingers of the RAKE can be reduced in such a way that the loss of soft information is minimized.



(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.